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*dent and teacher: Use this cover sheet for mailing or faxing.***PROJECT BOOKLET**MAT1038 Applied Mathematics 10
Module 5**FOR STUDENT USE ONLY**

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Student File Number:

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FOR OFFICE USE ONLY

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Teacher

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- Is the project completed? If not, explain why.
- Has your work been reread to ensure accuracy in spelling and details?
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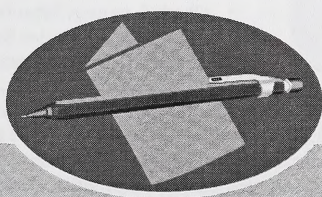
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Applied Mathematics 10

Module 5

Linear Functions

PROJECT BOOKLET



**Learning
Technologies
Branch**

Alberta
LEARNING

FOR TEACHER'S USE ONLY

Summary

Total Possible Marks	Your Mark
30	

Teacher's Comments

Applied Mathematics 10
 Module 5: Linear Functions
 Project Booklet
 Learning Technologies Branch
 ISBN 0-7741-2167-X

This document is intended for	
Students	✓
Teachers	✓
Administrators	
Home Instructors	
General Public	
Other	



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- Alberta Learning, <http://www.learning.gov.ab.ca>
- Learning Technologies Branch, <http://www.learning.gov.ab.ca/lrb>
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PROJECT BOOKLET

APPLIED MATHEMATICS 10 – MODULE 5: LINEAR FUNCTIONS

Read all parts of this project carefully and record your answers in the appropriate place. Work slowly and carefully. If you are having difficulties, go back and review the appropriate activity in the Student Module Booklet.

Be sure to complete all parts of the project and proofread your responses before submitting this project to your teacher. If you require more room for any response, use your own paper and attach it securely to this booklet.

Your mark on this module will be determined by how well you do on the module project in this Project Booklet and the module assignment in the Assignment Booklet.

The value of each part of the module project is stated in the left margin of this booklet. The total value of the module project is 30 marks.

30

Module Project: Contrasting Two Species

Your project for Module 5 is Contrasting Two Species. This project involves researching the body structures of humans and gorillas. For each species, you will make a scatterplot to display the relation between arm span and height. You will make some inferences about how the structural differences relate to the different uses of these structures.

1. In Investigation 1 on page 256 of the textbook, you collected data on the arm span and height of several people.

②

- a. Fill out the following chart using the data you collected.

Comparing Arm Span and Height of Humans

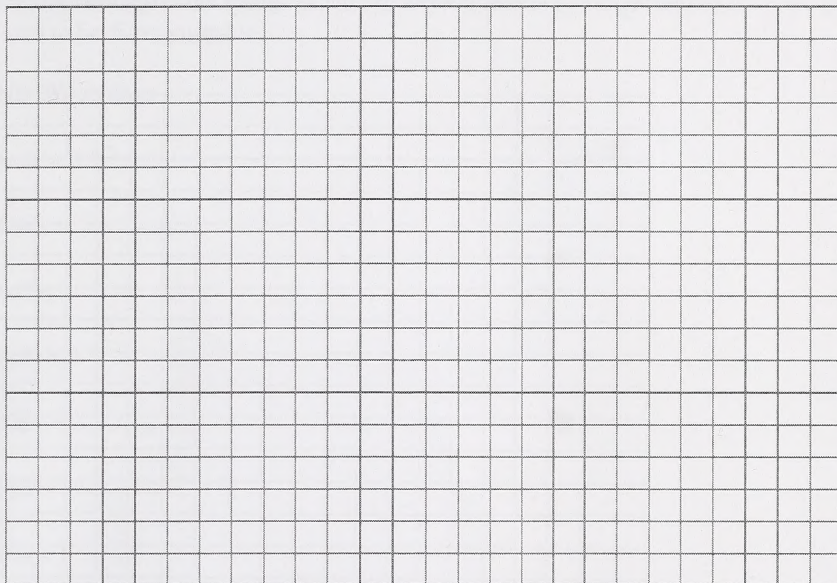
Name	Arm Span (cm)	Height (cm)

Note: If you do not have a large enough group with which to work, you may supplement your data with the data provided at the right. However, you must measure the arm span and height of at least two individuals yourself.

Name	Arm Span (cm)	Height (cm)
Aladdin	170	158
Arif	180	165
Bill	140	160
Meghan	175	182
Pat	195	180
Tyrel	96	100
Udham	95	92
Wayne	130	110

③

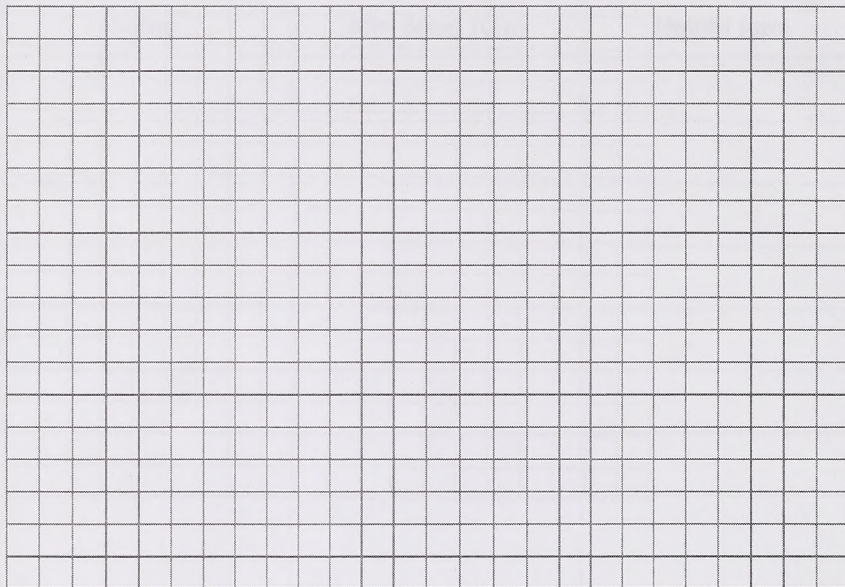
- b. Create a scatterplot of the data. Estimate a line of best fit for the data.



③

2. Turn to page 292 of the textbook and examine the given chart. It has data on the arm span and height of various gorillas.

Use the data to create a scatterplot of the given data. Estimate a line of best fit for the data.



Gorilla	Arm Span (cm)	Height (cm)
Koko	175	135
Ann	165	125
Lila	155	115
Margaret	170	130
Flo	160	120
Frank	150	110
Alfred	140	100
Yvonne	170	130

③

3. On your graphing calculator, choose WINDOW settings suitable for plotting **both** the gorilla and human data samples.

Record the settings in the spaces provided. **Note:** The scale settings should allow the ticks on the axes to be distinguishable.

WINDOW settings

Xmin = 0

Xmax = _____

Xscl = _____

Ymin = 0

Ymax = _____

Yscl = _____

Xres = 1

②

4. a. Using your graphing calculator, create a scatterplot and determine the line of best fit for the human data.

How does this line of best fit compare with your estimated line of best fit in question 1.b.?

②

- b. Use your graphing calculator to determine the equation of the line of best fit and the correlation coefficient for the data on humans.

②

- c. Using the equation of the line of best fit from 4.b., calculate the arm span of Michael Jordan, whose height is 198 cm. Show your work. Round the answer to the nearest centimetre.

②

5. a. Using your graphing calculator, create a scatterplot and determine the line of best fit for the given gorilla data.

How does this line of best fit compare with your estimated line of best fit in question 2?

②

- b. Use your graphing calculator to determine the equation of the line of best fit and the correlation coefficient for the gorilla data.

②

- c. Turn to page 292 of your textbook and refer to the table of data of “Height/Arm-Span Relationship.” Using the equation of best fit (from question 5.b.), calculate the expected arm spans of Koko and Ndume, whose heights are given in the table. Round your answers to the nearest whole number.

①

6. Refer to the data for humans and the gorillas. How well can the data be approximated by linear functions? Give reasons to support your answer.

- ② 7. Indicate which species has the greater arm span—human or gorillas. Tell how your graphs support your conclusion.

- ① 8. Based on what you have discovered about the way of life of gorillas, tell why you think the different arm span of the animal helps it.

- ③ 9. Besides the physical feature of arm span versus height, list three physical features of gorillas that are different from humans. Tell how you think each of these features helps the animal live in its environment.
